# EPA

United States Environmental Protection Agency
Washington, DC 20460

## Work Assignment

Work Assignment Number: 2-09

☐ Other ☐ Amendment Number:

| Contract Number | Contract Period | Title of Work Assignment/SF Site Name |
|---|---|---|
| EP-D-11-006 | 04/29/2011 To 03/28/2013 Base Option Period Number 1 | Optical Gas Imaging Protocol |

Contractor: EASTERN RESEARCH GROUP, INC.

Specify Section and paragraph of Contract SOW: B

Purpose:
- [X] Work Assignment
- [ ] Work Assignment Amendment
- [ ] Work Plan Approval
- [ ] Work Assignment Close-Out
- [ ] Incremental Funding

Period of Performance: From 09/17/2012 To 03/28/2013

Comments:
This work assignment includes 300 hours for preparation of the work plan and to begin work on the work assignment. To the best of my knowledge, this work does not duplicate any work previously performed or currently being performed by this office.

☐ Superfund — Accounting and Appropriations Data — [X] Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*) ☐

| Line | DCN (Max 6) | Budget/FY (Max 4) | Appropriation Code (Max 6) | Budget Org/Code (Max 7) | Program Element (Max 9) | Object Class (Max 4) | Amount (Dollars) | (Cents) | Site/Project (Max 8) | Cost Org/Code (Max 7) |
|---|---|---|---|---|---|---|---|---|---|---|
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### Authorized Work Assignment Ceiling

| | Cost/Fee: | LOE: |
|---|---|---|
| Contract Period: 04/29/2011 To 03/28/2013 | | 0 |
| This Action: | | 300 |
| Total: | | 300 |

### Work Plan / Cost Estimate Approvals

| | Cost/Fee: | LOE: |
|---|---|---|
| Contractor WP Dated: | | |
| Cumulative Approved: | | |

| | |
|---|---|
| Work Assignment Manager Name: Jason Dewees<br>(Signature) (Date) | Branch/Mail Code:<br>Phone Number: 919-541-9724<br>FAX Number: |
| Project Officer Name: Margaret Dougherty<br>(Signature) (Date) | Branch/Mail Code:<br>Phone Number: 919-541-2344<br>FAX Number: |
| Other Agency Official Name:<br>(Signature) (Date) | Branch/Mail Code:<br>Phone Number:<br>FAX Number: |
| Contracting Official Name: Rodney-Daryl Jones<br>(Signature) (Date) | Branch/Mail Code:<br>Phone Number: 919-541-3112<br>FAX Number: |

## Statement of Work

**I. Title: Optical Gas Imaging (OGI) Protocol – Technical Support**
**Contractor Name: ERG**
**Contract #: EP-D-11-006**
**WA #: 2-09**

## II. CONTRACTING OFFICER REPRESENTATIVE

Jason M DeWees
U.S. EPA
Office of Air Quality Planning and Standards
Air Quality Assessment Division
Measurement Technology Group (E141-03)
Research Triangle Park, NC 27711

## III. BACKGROUND

The Clean Air Act (CAA) establishes a national framework for air quality management in the United States. The 1990 amendments to the CAA, while leaving intact the basic structure of this program, mandated both new Federal programs for controlling air pollution and major philosophical changes in some of the existing programs. Notable new programs were the addition of a technology-based approach for controlling air toxics under Title III, the Title IV requirements for the reduction in acid deposition, and the addition of a federally mandated operating permits program under Title V.

The work to be performed under this work assignment provides support to the U.S. Environmental Protection Agency (EPA), Office of Air Quality Planning and Standards (OAQPS) in developing emission standards for new source performance standards (NSPS), national emission standards for hazardous air pollutants (NESHAP) for source categories, and in developing, evaluating, and promoting standardized prescriptive procedures for (1) characterizing emissions from a wide spectrum of controlled and uncontrolled sources (also known as source characterization) and (2) compliance assurance monitoring.

As part of effort under this work assignment the contactor may evaluate alternative test methods and monitoring procedures, develop and promote the proper and consistent application of stationary source and ambient air emissions test and monitoring methods in the development and enforcement of emissions control programs nationally, and develop, evaluate, and demonstrate new emissions measurement technology.

The goal of the tasks in this work assignment is to limit risks to the public from exposure to 188 hazardous air pollutants (HAPs) that are listed in the CAA. The maximum achievable control technology (MACT) standards have been published for almost all source categories. EPA continues to revise MACT standards and to include residual risk standards which are designed to reduce any unacceptable public health risks from major sources. Stationary facilities including refineries and chemical industries include both ducted sources and area or fugitive sources that contribute to the mixture of toxic air pollutants found in urban air sheds.

## IV. TASKS

This work assignment involves support for regulatory development of measurement procedures for Hazardous Air Pollutants. The goal is to limit risks to the public from exposure to 188 hazardous air pollutants (HAPs) that are listed in the CAA. The maximum achievable control technology (MACT) standards have been published for almost all source categories. EPA continues to revise MACT standards and to include residual risk standards which are designed to reduce any unacceptable public health risks from major sources. Stationary facilities including refineries and chemical industries include both ducted sources and area or fugitive sources that contribute to the mixture of toxic air pollutants found in urban air sheds.

The focus of Tasks 1 through 4 is evaluate and support the use of optical gas imaging as technology for leak detection at facilities with known percent level concentrations of alkanes.

Task 1 Management and Workplan

The Contractor shall initiate and coordinate the technical activities of the staff assigned to this project. The contractor shall prepare a work plan describing the technical approach for each of the tasks in this work assignment. In addition the contractor shall provide a cost and labor estimate for the total work assignment and the cost and labor required to complete each of the work assignment tasks. The contractor shall plan for monthly technical conference calls to brief the WAM and EPA team on progress or issues to complete each task. The Contractor shall provide monthly reports to the EPA contracting officer representative (COR) for this work assignment (WA). Monthly progress reports are required by the contract deliverables and must contain a summary of technical progress and work assignment resource use (labor and cost) information as required by the contract.

Task 1 Deliverables:

1. Work Plan.
2. Monthly Progress Reports.

Task 2 Literature Search

The contractor shall perform a literature search and draft a review of the literature under technical direction of the EPA work assignment manager (WAM) regarding current knowledge and findings related to the use of optical gas imaging (OGI) for leak detection or quantification of organic compounds in industrial or related environments. Topics of interest of the review are, but not limited to, applicability, potential interferences, detection capabilities, measurement precision, potential performance criteria, limitations of the technology, and operator certification procedures and programs. The literature review should include the work done under the Environmental Technology Verification Program.

Task 2 Deliverables:

1. Literature Review including all relevant references found during search.

Task 3 Initial Laboratory Feasibility Study

The contractor shall perform an initial laboratory study under technical direction of the EPA WAM and in consultation with experienced OGI users in the industrial environment. This initial laboratory study will provide initial estimates of the "best case" detection capabilities of a typical

commercially available OGI camera and will inform a Quality Assurance Project Plan (QAPP,Task 4) for a future laboratory studies and a field test campaign. The detection capabilities study should be based butane, propane, and a combination of the two compounds.

Task 3 Deliverables:

1. Test Plan for laboratory feasibility study.
2. Memo report summarizing results and conclusions from study.
3. Electronic copy of videos produced during study with index to summarize videos contents.

Task 4 Quality Assurance Project Plan

The contractor shall prepare a Category III QAPP under technical direction from the WAM and in consultation with experienced OGI users in the industrial environment. The QAPP will be prepared following the format in EPA/240/B-01/003, "EPA Requirements for Quality Assurance Project Plans (EPA QA/R-5)." The contractor shall provide the QAPP in MS-Word for EPA review and approval. This QAPP shall provide technical support for a potential future OGI protocol for leak detection at refineries.

The project plan shall:

- Explore and provide a greater understanding of issues such as humidity, thermal background, concentration versus mass rate detection, the effect of camera settings, measurement precision, wind effects, and other environmental and technical issues identified during Task 2 and 3.
- Include at least two commercially available OGI cameras from different manufacturer
- Address both laboratory and field work for these instruments addressing measurement of propane and butane, particularly from refinery equipment sources.
- Contain SOPs for both OGI cameras and ancillary equipment.
- Address potential OGI camera operator requirements such as certification and experience.
- Include OGI field work in comparison to quantitative "bagging" of leaks.
- Include laboratory work investigating the inter and intra model OGI precision.

Task 4 Deliverables:

1. Initial outline of laboratory and field test plan for review and comment.
2. Draft QAPP for review and comment.
3. Final QAPP with the integration of EPA comments

## V. SCHEDULE OF DELIVERABLES

| Task | Activity | Date | Comments |
|---|---|---|---|
| 1 | Work Plan<br><br>Provide Monthly Progress Reports | Within 15 days of work assignment receipt<br>By the 15th of the following month | NA |
| 2 | Literature Review | 90 days after work plan approval | |
| 3 | Test plan for laboratory work | 60 days after work plan approval | |
| | Memo Report and electronic archives | 120 days after work plan approval | |
| 4 | Initial Outline of Laboratory and Field test plan | 90 days after work plan approval | |
| | Draft QAPP | 120 days after work plan approval | |
| | Final QAPP | 15 days after receiving EPA comments | |

## VI. REPORTING REQUIREMENTS

The reporting requirements are in accordance with the terms and conditions of the contract.

# EPA

United States Environmental Protection Agency
Washington, DC 20460

## Work Assignment

Work Assignment Number: 2-09

☐ Other ☒ Amendment Number: 000001

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|---|---|---|
| EP-D-11-006 | 04/29/2011 To 03/31/2014 Base X Option Period Number | |

Contractor: EASTERN RESEARCH GROUP, INC.

Specify Section and paragraph of Contract SOW:

Purpose:
- ☐ Work Assignment
- ☒ Work Assignment Amendment
- ☐ Work Plan Approval
- ☐ Work Assignment Close-Out
- ☐ Incremental Funding

Period of Performance: From 09/17/2012 To 03/31/2013

Comments:
This Work Assignment Change extends the Period of Performance to read:03/31/2013 in accordance with the Period of Performance end date of Option Period I.

This amendment is in accordance with CMM 7.3.5.1 (D)

☐ Superfund — Accounting and Appropriations Data — ☒ Non-Superfund

Note: To report additional accounting and appropriations date use EPA Form 1900-69A.

SFO (*Max 2*) ☐

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| Work Assignment Manager Name: Jason Dewees<br>(Signature) (Date) | Branch/Mail Code:<br>Phone Number: 919-541-9724<br>FAX Number: |
| Project Officer Name: Karen C. Watson<br>(Signature) (Date) | Branch/Mail Code:<br>Phone Number: 919-541-3114<br>FAX Number: |
| Other Agency Official Name:<br>(Signature) (Date) | Branch/Mail Code:<br>Phone Number:<br>FAX Number: |
| Contracting Official Name: Rodney-Daryl Jones<br>(Signature) (Date) | Branch/Mail Code:<br>Phone Number: 919-541-3112<br>FAX Number: |